

PROGRAM FOR ARTERIAL SYSTEM SYNCHRONIZATION (PASS) FY13/14 CYCLE

State Route 82 – El Camino Real (Santa Clara County) Signal Timing Project

Caltrans | Metropolitan Transportation Commission

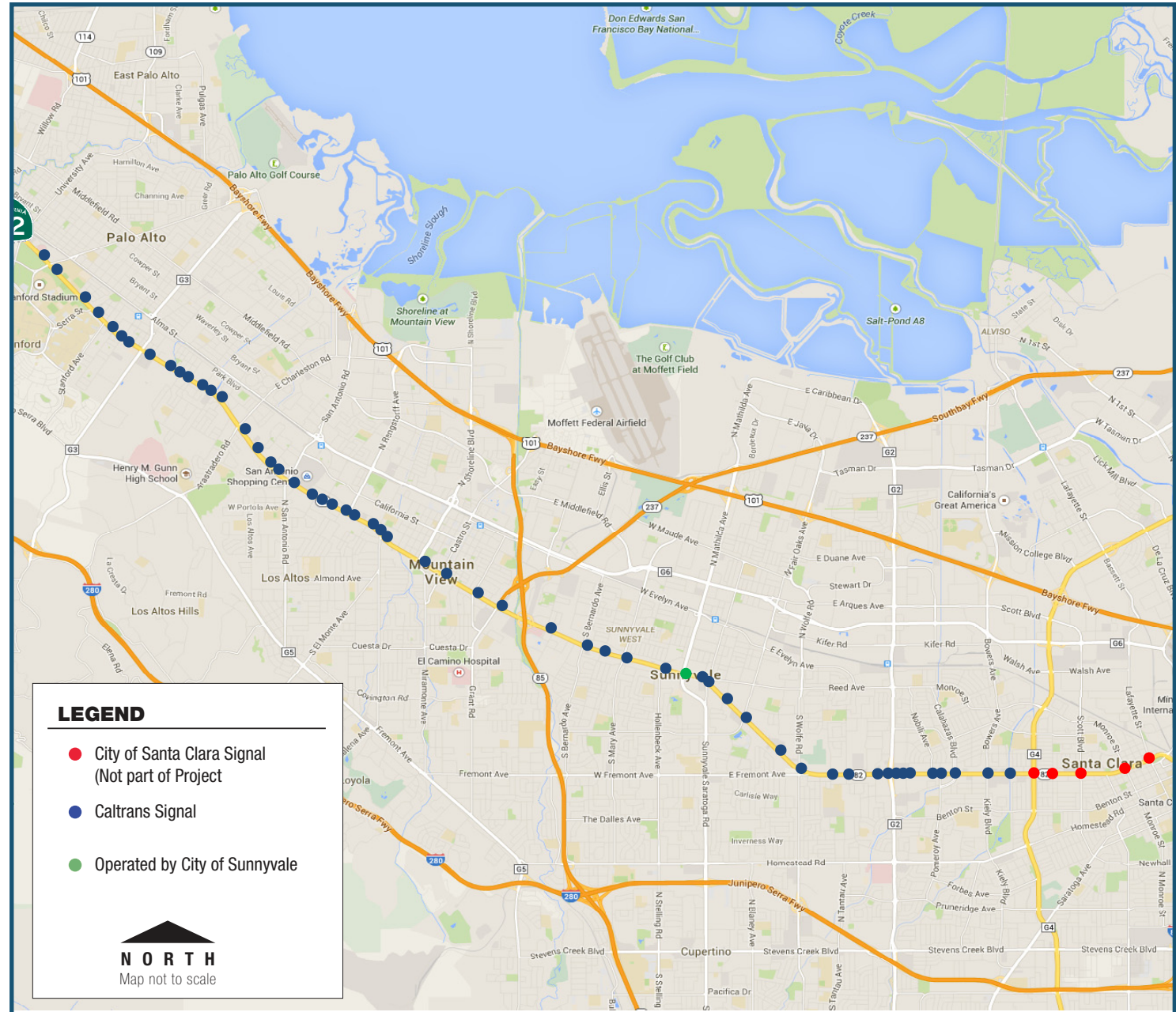
PROJECT OVERVIEW

Caltrans received a grant from the Metropolitan Transportation Commission's Program for Arterial System Synchronization (PASS) to conduct a signal timing study for 59 traffic signals along State Route 82 (El Camino Real) in Santa Clara County. The project covered the segment from The Alameda to Medical Foundation, but it did not include six signals under jurisdiction of the City of Santa Clara. Fifty eight traffic signals are owned and operated by Caltrans, and one signal is operated by the City of Sunnyvale.

The goal of this project was to facilitate traffic progression along El Camino Real, and to optimize signal timing plans to achieve operational efficiency of the traffic signals. The project conducted timing analysis and developed and implemented signal coordination for the weekday AM, midday, and PM peak periods.

This PASS project involved the completion of the following major tasks: collecting traffic volumes and turning movement counts, including bike and pedestrian counts, at all project intersections; analyzing this traffic data including collision data to develop optimized signal timing plans; implementing and fine-tuning the plans in the field; and conducting travel time surveys to analyze

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PROJECT OVERVIEW (CONTINUED)

the performance of the new timing plans. This project also provided GPS-based time-sources for 50 intersections.

BENEFITS TO VARIOUS MODES



BENEFITS TO BICYCLISTS: The minimum green time was increased at all project intersections according to the 2012 California MUTCD. This change will result in enhanced safety for bicyclists upon crossing intersections.



BENEFITS TO PEDESTRIANS: To improve safety, the pedestrian crossing timings were updated at all of the project intersections based on the 2012 California MUTCD. This resulted in additional crossing times at all intersections. Despite the increase in pedestrian timings, travel time savings for autos were achieved by efficiently allocating and maximizing the use of available time.



BENEFITS TO TRANSIT: As part of the installation of GPS clocks, Caltrans also upgraded hardware to enable the use of Transit System Priority (TSP) and the GPS clocks in the same controller cabinet. This allowed VTA buses to continue using TSP, when necessary, to maintain schedule.



BENEFITS TO TRAFFIC SAFETY: To enhance traffic safety, the yellow clearance timing parameters were updated based on posted speed limits.

Project Costs

Consultant Costs (Basic Services/ Plans)	\$159,300
Consultant Costs (Additional Plans, TSP, IM Flush Plans, etc.)	\$4,400
Other Project Costs (GPS Clocks, Communications equipment, etc.)	\$15,000
Agency Staff Costs (Estimate)	\$39,825
Total Costs	\$218,525

Project Benefits

Measures	First Year		Lifetime (5 Years)	
	Savings	Monetized Savings	Savings	Monetized Savings
Travel Time Savings	240,547 hrs.	\$4,694,369	645,282 hrs.	\$12,592,910
Fuel Consumption Savings	1,038,106 gal.	\$4,006,223	2,784,777 gal.	\$10,746,919
ROG Emissions Reduction	3.40 tons	\$4,284	9.13 tons	\$11,491
NOx Emissions Reduction	2.34 tons	\$42,156	6.28 tons	\$113,086
PM2.5 Emissions Reduction	0.13 tons	\$39,465	0.34 tons	\$105,867
CO Emissions Reduction	32.28 tons	\$2,495	86.59 tons	\$6,692
Total Lifetime Benefits				\$23,576,966

Overall Project Benefits	Auto
Average Decrease in Travel Time	15%
Average Speed Increase	25%
Average Fuel Savings	12%
Average Reduction in Signal Delay	23%
Average Reduction in Number of Stops	33%
Overall Benefit-Cost Ratio	110:1

PROJECT BENEFITS SUMMARY



Average Reduction in Auto Signal Delay: 23%

Average Reduction in Number of Stops: 33%

Auto Fuel Consumption Savings: 12% or 2,784,777 gallons

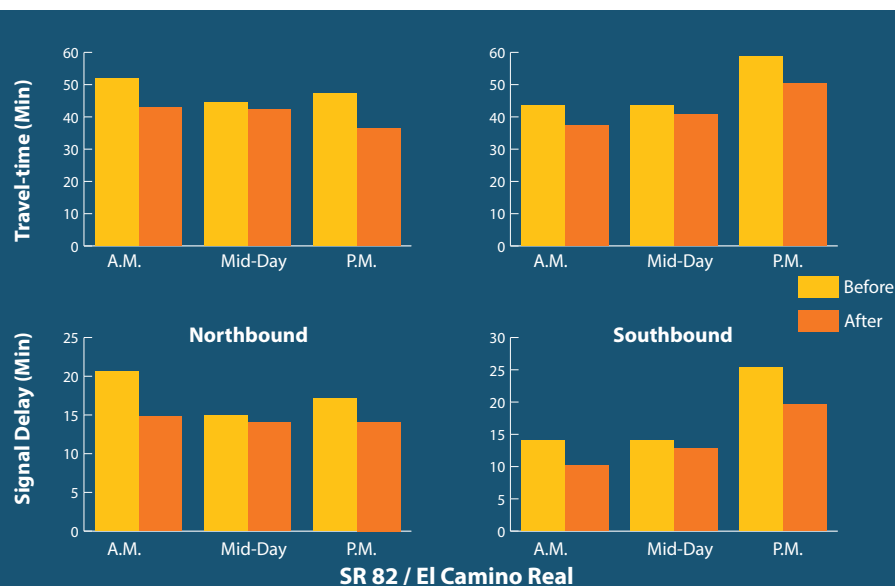


Total Emissions Reduced (ROG, NOx, PM2.5, CO): 102.34 tons

Auto Travel Time Savings: 15% or 645,282 hours



Overall Project Benefit-cost Ratio = 110:1



For more info, please contact:

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